



Norman H. Bangerter  
Governor  
Dee C. Hansen  
Executive Director  
Dianne R. Nielson, Ph.D.  
Division Director

# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
801-538-5340

DOGM  
MINERALS PROGRAM  
FILE COPY

March 7, 1990

TO: Wayne Hedberg, Permit Lead

FROM: Tony Gallegos, Reclamation Engineer *ddg*

RE: Kennecott Utah Copper, Pine Canyon Reclamation Estimate, M/045/004,  
Tooele County, Utah

## R613-004-113, Surety

I have reviewed the reclamation cost estimate submitted by Kennecott in conjunction with their Pine Canyon Final Reclamation Plan. The proposed reclamation estimate and the estimate I arrived at are very close when the contingency and escalation are taken into account. Adding a ten percent contingency and the escalation factor of 1.84% for a five-year period to Kennecott's proposed estimate of \$72,400, increased the estimate to approximately \$86,900. The estimate I arrived at is \$84,500, using unit costs obtained from the Means Site Work Cost Data, 1990. For details of this estimate see attachments.

For the most part, I feel confident with the figures contained in this estimate. The single largest disparity between my estimate and Kennecott's is for the removal of waste rock, with my estimate being nearly \$10,000 lower. This is due to the lack of information provided regarding the surface area or volume of materials considered as waste rock. Attached is a copy of Kennecott's estimate for comparison.

Since the net totals are fairly close, I would recommend that a reclamation surety of \$84,500 be retained for this project.

jb  
Attachments  
cc: Holland Shepherd  
WMN6/1

## Reclamation Estimate

March 1, 1990

Kennecott Utah Copper

Pine Canyon Mine Tooele County

M/045/004

Prepared by Utah State Division of Oil, Gas &amp; Mining

Description	Quantity	Unit	\$/Unit	Cost(\$)
=====	=====	=====	=====	=====
Flume Removal	10210	LF	2.00	20,420
Waste Rock Removal	500	CY	5.00	2,500
Power Pole Demolition	30	pole	180.00	5,400
Railroad Track Demolition	500	ft	13.80	6,900
Construct Retention Berms	2892	CY	1.31	3,789
Construct Portal Bulkhead	18	LF	105.00	1,890
Backfill Portal	595	CY	3.16	1,880
Concrete Box Demolition	256	SF	13.20	3,379
Cover Ripped Pad Area w/12" Topsoil	200	CY	3.16	632
Headframe Openings and Hardware	-----	-----	lump sum	4,000
Scarify the Area	6.5	acre	120.00	780
Apply Fertilizer	6.5	acre	700.00	4,550
Seed the Area	6.5	acre	490.00	3,185
Apply Mulch	6.5	acre	870.00	5,655
Apply Urea	6.5	acre	290.00	1,885
Riprap	22	CY	44.00	968
Monitor the Area for 3 Years	12	day	160.00	1,920
Miscellaneous Projects Not Listed	-----	-----	lump sum	600
SUBTOTAL				70,333
+10% CONTINGENCY				7,033
SUBTOTAL				77,366
ESCALATION (1.84% FOR 5 YRS)				7,118
TOTAL				84,484
ROUNDED TOTAL				84,500
=====				=====

Reclamation Estimate

March 1, 1990

Kennecott Utah Copper

Pine Canyon Mine Tooele County

M/045/004

Prepared by Utah State Division of Oil, Gas & Mining

Miscellaneous Projects Not Listed

=====

Flume Backfill

Demolition of Boxes and Pipe Along Flume

Construction of Tunnel Discharge Channel

Ripping Pad Area Near Portal

Constructing Asphalt Water Bar

Crimping the Applied Mulch

Erosion Control Mats for Berm Spillways

KENNECOTT UTAH COPPER CORPORATION

ESTIMATED CONTINGENCY COSTS FOR FINAL RECLAMATION

Pine Canyon Reclamation Project

<u>Item</u>	<u>Cost</u>
Demolition/Burial remaining structures	\$14,970
Earthwork/Regrading	6,480
Removal of Waste Rock	12,370
Construction of Water Retention Berms	6,490
Removal of External Metal from Headframe	6,000
Pine Canyon Tunnel Portal Removal	3,270
Riprap	550
Revegetation	8,290
Asphalt Water Bars	500
Monitoring	1,920
Repairs to Vegetation	<u>4,920</u>
Subtotal	\$65,800
Construction Supervision (10% of subtotal)	<u>6,600</u>
Total	\$72,400

Unit costs were obtained from Means Site Work Cost Data, 1989. Quantities of materials were calculated from the June 28, 1989 reclamation plan prepared by JBR Consultants Group.